WHAT IS CLAIMED IS:

1. An image data conversion device which converts image data comprising pixels of M columns (M is a positive integer) in the horizontal direction by N rows (N is a positive integer) in the vertical direction, wherein said image data are first one dimensional data gained by repeating pixels for M columns, which continue in the horizontal direction, N times in sequence in the vertical direction, said image data conversion device including:

a line memory which stores said first one dimensional data;

a detection circuit which is connected to said line memory and which detects the number M of pixels in the horizontal direction of said first one dimensional data which are stored in said line memory; and

a conversion circuit which is connected to said line memory and said detection circuit and which reads out, in the order related to said M and, thereby, converts each pixel of said first one dimensional data stored in said line memory into a second one dimensional data.

2. The image data conversion device according to Claim 1 wherein said image data includes data representing the pixel number M in the horizontal direction, and said detection circuit includes a circuit which reads out data representing the pixel number M in the horizontal direction from said first one dimensional data.

3. The image data conversion device according to Claim 1 wherein said conversion circuit includes a circuit which reads out each pixel of said first one dimensional data in the order in accordance with a multiple of said M.

4. The image data conversion device according to Claim 1, wherein said conversion circuit is connected to said line memory and said detection circuit, and which further includes:

a circuit which reads out a plurality of pixels existing in positions

defined based on said M having predetermined pixel positions, in said first one dimensional data stored in said line memory, as the reference from said first one dimensional data in sequence; and

a circuit which carries out, repeatedly, a process of converting said predetermined pixel positions according to a predetermined order so as to be read out in sequence.

5. The image data conversion device according to Claim 4 wherein a position defined based on said M is the position, located a multiple of said M apart, having a predetermined position of a pixel as the reference.

6. The image data conversion device according to Claim 4 wherein said plurality of pixels are N pixels.

7. An image data conversion device which converts image data comprising pixels of M columns (M is a positive integer) in the horizontal direction by N rows (N is a positive integer) in the vertical direction, wherein said pixels are divided into data blocks of M/P columns (P is a positive integer and P is a divisor of M) in the horizontal direction and N/R rows (R is a positive integer and R is a divisor of N) in the vertical direction; and pixel data included in said divided data blocks are compressed into variable length code data; said image data are first one dimensional data which include a plurality of pieces of said variable length code data, data representing the number M of pixels in the horizontal direction and data representing the number P of pixels in the horizontal direction of said data blocks; said variable length code data are arranged in the order corresponding to the order of the data blocks when the data blocks are arranged in the line-sequential prioritizing the rows, said image data conversion device including:

a detection circuit for detecting data representing the number M of pixels in the horizontal direction and data representing the number P of pixels in the horizontal direction of said data blocks from said first one dimensional data;

a decoding circuit which is connected to said detection circuit and which reads out variable length code data, corresponding to a plurality of data blocks existing in the positions defined based on said (M/P) having a predetermined data block in said first one dimensional data as the reference, from said first one dimensional data in sequence so as to be decoded;

an output circuit which is connected to said decoding circuit and which outputs, in sequence, pixels for one column in the vertical direction which are decoded by said decoding circuit; and

a control circuit which is connected to said decoding circuit and which makes said decoding circuit carry out repeatedly the process of converting the positions of said predetermined data blocks in accordance with a preset order so as to read out said variable length code data.

8. The image data conversion device according to Claim 7 wherein a position defined based on said (M/P) is the position located a multiple of said (M/P) apart having a predetermined data block as the reference.

9. The image data conversion device according to Claim 7 wherein:

said decoding circuit includes a circuit which reads out, (N/R) times, variable length code data which corresponds to a plurality of data blocks existing in the positions located a multiple of said (M/P) apart having a predetermined data block in said first one dimensional data as the reference from said first one dimensional data so as to be decoded; and

said control circuit includes a circuit which makes said decoding circuit repeatedly carry out a process of changing, (M/P) times, the positions of said predetermined data blocks one by one so as to read out said variable length code data.

10. The image data conversion device according to Claim 7 wherein:

said image data further include markers provided for a constant number of data blocks; and

said decoding circuit includes a circuit for specifying said

predetermined data blocks by using said markers.

11. The image data conversion device according to Claim 7 wherein:

said first one dimensional data further include position information representing positions of (N/R) data blocks which include leading data of each row for every R rows in said first one dimensional data;

the detection circuit includes a circuit for detecting said position information; and

said data conversion device further includes:

(N/R) buffers, each of said (N/R) buffers having a capacity for storing variable length code data corresponding to at least one data block; and

a buffer control circuit which is connected to each of said (N/R) buffers and said decoding circuit and which controls said buffer and said decoding circuit so as to read out variable length code data, corresponding to the data blocks continuing in the vertical direction, based on said position information from said one dimensional data in order to be stored in one buffer among said (N/R) buffers corresponding to said read out variable length code data and at the same time carries out repeatedly a process of transferring variable length code data which have been stored in another buffer to said decoding circuit.

12. The image data conversion device according to Claim 7 wherein said output circuit includes a circuit which outputs, in parallel, pixels for P columns in the vertical direction which have been decoded by said decoding circuit.

13. The image data conversion device according to Claim 12 wherein a position defined based on said (M/P) is the position located a multiple of said (M/P) apart having a predetermined data block as the reference.

14. The image data conversion device according to Claim 12 wherein:

said decoding circuit includes a circuit which reads out, (N/R) times, variable length code data which corresponds to a plurality of data blocks existing in the positions located a multiple of said (M/P) apart having a predetermined data block in said first one dimensional data as the reference from said first one dimensional data so as to be decoded; and

said control circuit includes a circuit which makes said decoding circuit repeatedly carry out a process of changing, (M/P) times, the positions of said predetermined data blocks one by one so as to read out said variable length code data.

15. The image data conversion device according to Claim 12 wherein:

said image data further includes markers provided for a constant number of data blocks; and

said decoding circuit includes a circuit which specifies said predetermined data block by using said markers.

16. The image data conversion device according to Claim 12 wherein:

said first one dimensional data further include position information representing the positions of (N/R) data blocks which include leading data of respective rows for every R rows is said first one dimensional data;

said detection circuit includes a circuit which detects said position information;

said data conversion device further includes

(N/R) buffers, each of said (N/R) buffers having a capacity for storing variable length code data corresponding to, at least, one data block and,

a buffer control circuit connected to each of said (N/R) buffers as well as to said decoding circuit which carries out, repeatedly, a process of control of said buffer and said decoding circuit so as to read out variable length code data corresponding to data blocks continuing in the vertical direction from said one dimensional data based on said position information so as to be stored in one buffer among said (N/R) buffers corresponding to said

variable length code data which have been read out and, at the same time, a process of transfer of variable length code data which have been stored in another buffer to said decoding circuit.

17. An image data conversion method for converting image data comprising pixels of M columns (M is a positive integer) in the horizontal direction by N rows (N is a positive integer) in the vertical direction, wherein: said pixels are divided into data blocks of M/P columns (P is a positive integer and P is a divisor of M) in the horizontal direction and N/R rows (R is a positive integer and R is a divisor of N) in the vertical direction and pixel data included in said divided data blocks are compressed into variable length code data; said image data are first one dimensional data which include a plurality of pieces of said variable length code data, data representing the number M of pixels in the horizontal direction and data representing the number P of pixels in the horizontal direction of said data blocks; and said variable length code data are arranged in the order corresponding to the order of data blocks when the data blocks are arranged in the line order prioritizing rows, said image data conversion method including the steps of:

detecting data representing the number M of pixels in the horizontal direction and the data representing the number P of pixels in the horizontal direction of said data blocks from said first one dimensional data;

reading out, in sequence, variable length code data, corresponding to a plurality of data blocks which exist at the positions defined based on said (M/P) having a predetermined data block as the reference in said first one dimensional data, from said first one dimensional data so as to be decoded;

outputting, in sequence, pixels for one column in the vertical direction decoded in said step of decoding variable length code data;

decoding said variable length code data while converting the positions of said predetermined data blocks according to a preset order; and

repeating said step of outputting.

18. The image data conversion method according to Claim 17 wherein:

said decoding step includes a step of reading out, (N/R) times, variable length code data, corresponding to a plurality of data blocks existing in the positions located a multiple of said (M/P) apart having a predetermined data block in said first one dimensional data as the reference, from said first one dimensional data so as to be decoded; and

said repeating step includes a step of repeating the step of decoding and the step of output of said variable length code data while converting, (M/P) times, said positions of the predetermined data blocks one by one.

19. The image data conversion method according to Claim 17 wherein said step of output includes a step of outputting, in parallel, pixels for P columns in the vertical direction which have been decoded in said step of decoding.

20. The image data conversion method according to Claim 19 wherein:

said step of decoding includes a step of reading out, (N/R) times, variable length code data, corresponding to a plurality of data blocks existing in the positions located a multiple of said (M/P) apart having predetermined data blocks in said first one dimensional data as the reference, from said first one dimensional data so as to be decoded; and

said step of repeating includes a step of repeating the step of decoding and the step of outputting said variable length code data while converting, (M/P) times, said positions of the predetermined data blocks one by one.